

CLAIMS

1. A method of activating a haptic output device of the kind responsive to signals defining directional force comprising receiving a series of signals defining a  
5 multiplicity of data packets, each packet defining a position measured at one location for transmission to the current location, determining from packet data the information defining a position to which a haptic output device is expected to move, storing historic positional data defining each of a multiplicity of positions to which the haptic output device has moved, deriving a model of the space in  
10 which directional forces are being applied at said one location and storing data defining said model, deriving from the historic positional data and the data defining the model an anticipated position and generating output signals defining force and direction to move the haptic output device towards said anticipated position and correcting for differences between the anticipated position and the  
15 transmitted position on receipt of subsequent positional data.
2. The method of claim 1 further including signalling in each direction whereby haptic forces applied at one device in reaction to an applied force towards the current defined position are reflected to a corresponding device in the  
20 form of current positional signals in a series of return data packets.
3. The method of claim 1 or claim 2 further including determining from the data model of the space the presence of an impeding object whereby modification of the anticipated position and/or force may occur.  
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4. The method of any one of claims 1, 2 or 3 in which latency of the network is determined by transmitting a data packet to the network said packet including a time determinant identity, reflecting the data packet through the network and comparing the received time with the transmitted time to provide a  
30 latency parameter from which said damping factor is determined.

5. The method of claim 4 in which at least some transmitted packets carrying positional data also include the time determinant data, some of said time determinant data being returned to permit updating of the latency parameter.
- 5 6. The method of any one of claims 1 to 5 further including applying a modifying factor to the force and direction signals, said modifying factor being derived from pre determined user preference data.
7. An interactive haptic output terminal in combination with a bi-directional  
10 transmission arrangement, the terminal comprising at least a haptic output device and control means, said control means receiving signals from said haptic output device to determine a current position for said device, and to determine from signals received from said transmission arrangement a preferred current position for said haptic output device, said control mean determining an output force and  
15 direction required to move said haptic output device from the current position to the preferred position, storing historic positional data defining each of a multiplicity of positions to which the haptic output device has moved, deriving a model of the space in which directional forces are being applied and storing data defining said model, deriving from the historic positional data and the data  
20 defining the model an anticipated position and generating output signals defining force and direction to move the haptic output device towards said anticipated position and correcting for differences between the anticipated position and the transmitted position on receipt of subsequent positional data.
- 25 8. A terminal as claimed in claim 7 in which the control means receives signals from the haptic output device, said signals containing data defining the position of said device at any particular time, said control means converting said data to signals for transmission to said bi-directional transmission arrangement at predetermined intervals.
- 30 9. A terminal as claimed in claim 7 or claim 8 in which the signals defining a preferred current position are generated by an environment simulator, for example a programmed computer.

10. A terminal as claimed in claim 7 or claim 8 in which the signals defining a preferred current position are generated by a corresponding interactive output terminal at the opposed end of the transmission arrangement.